# CS361 Algorithm Lab 4

# What to do

1. Write a program to implement the following DFA.
   1. Q = {s, q1, q2, r1, r2}
   2. s is the start state
   3. A = {q1,r1} are the accept states
   4. Σ = {a,b}
   5. σ is defined by the following table:

|  |  |  |
| --- | --- | --- |
|  | a | b |
| s | q1 | r1 |
| q1 | q1 | q2 |
| q2 | q1 | q2 |
| r1 | r2 | r1 |
| r2 | r2 | r1 |

Show me the output (accepting the string or not) for the following strings:

1. ababa
2. baba
3. aababaab
4. babaabaaabb
5. ε (the empty string)
6. Implement the Bellman-Ford algorithm. Show commented code.
7. Show the output (including all of the distances and predecessors) for the Bellman-Ford algorithm on the graph below.

../labgraph2.pdf

# What to turn in:

You will turn in a ONE PDF file lab report. This lab report must have the following components:

* Code segments for each task listed above. These code segments must include comments. Make sure to thoroughly comment your code.
* Screen dumps from your output for each part. It is ok if each screen dump doesn’t include 10,000,000 integers, but you should thoroughly convince me that your code is working.
* Explaining thoroughly how you accomplished each task above, including citations. Did you use pseudocode from the book? Did you get support from a website (cite your source)? Did you work with a peer? Also include any stumbling blocks along the way.
* All Excel charts and graphs, along with a written analysis of your results.